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The ecosystem of competitive employment for university graduates with autism

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The ecosystem of competitive employment for university graduates with autism

Abstract

There is a growing population of young people with autism entering higher education and successfully completing qualifications, however, their postgraduate outcomes are often some of the poorest. This study responds to the gap in research regarding the transition out of higher education and into the labour market for this group. It outlines a two-phase qualitative research design to examine barriers and pathways to competitive employment for graduates with autism. Findings report the heterogenous experience of autism, the importance of natural supports such as family, universities, or supported employment for success, and the impact of attitudes regarding autism and inclusive practice expressed by employers and wider society. The study further analyses how people, practices and policies often interact contingently to open up or close down opportunities for graduates with autism within the ecosystem of competitive employment.

Keywords

Autism, Employment, Graduate, Higher Education, Ecosystem, Qualitative

Introduction

There is a relatively robust evidence-base to show that entering the workforce and maintaining competitive employment is a persistent challenge for adults with autism (Hedley et al, 2018; Howlin et al, 2004; Nicholas, et al, 2019; Scott et al 2019; Shattuck et al, 2012a; Taylor et al, 2015, *inter alia*). UK data suggest that up to 84% of adults on the autism spectrum are not in full-time employment (Mavranezouli et al, 2014) and similar trends are replicated elsewhere. In the United States, only 58% of young adults with autism (aged 18–25 years) have worked for pay, with only 21% in full-time employment (Roux et al, 2015); in Canada, Nicholas et al (2019) report an employment rate of only 14.3% for those 18-64 years of age; and in Australia adults with autism have an

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employment rate of 28% (Nicholas et al, 2019). Of those that are in employment, many are in posts inconsistent with their skill set or are overqualified for their role (Baldwin et al 2014).

What is less well-established in the literature is an analysis of employment rates and experiences of graduates with autism exiting higher education. Government figures in the UK indicate that these graduates are over five times more likely to be unemployed six months after completing their university course when compared to their non-disabled peers (BIS, 2016). More recently, Allen and Coney (2019) report that those disclosing an autistic spectrum condition were the least likely of any disabled group in higher education to be in full-time employment - in fact employment outcomes were actually worse for this group where they had gained postgraduate qualifications. Such evidence echoes concerns raised by Gelbar et al (2015) in the United States and suggests that there is a clear disparity between academic capability and their postgraduate outcomes for university graduates with autism This is particularly pertinent given that increasing numbers of young people with an autism diagnosis enrolling on higher education courses (HESA, 2018; Jackson, Hart and Volkmar, 2018).

The employment ecosystem for graduates

Previous studies have used bioecological models to better understand the complex interactions, relationships, and arrangements within specific socio-cultural contexts for individuals with autism across the life course (Dent and Coles, 2012; Kuhn et al, 2018; Wright et al, 2019). Nicholas et al (2018) proffer an employment ecosystem model which foregrounds the importance of the autistic individual, identifying factors that impact on employment success including job readiness, occupational focus, personal wellbeing and the presentation of foundational autistic traits. The ecosystem model is a welcome, and much-needed, contribution to the field in its recognition of the multifarious contexts that interact contingently in leading to different employment

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outcomes. This is particularly evident when considering the pathways and barriers to employment for graduates with autism.

Graduates on the autism spectrum

At the heart of the employment ecosystem is the individual. Whilst graduates on the autism spectrum are diverse as a population, by completing a university or college qualification they will tend to have average or above average IQ and possess skills and abilities which might provide an advantage in the workplace (Holwerda et al, 2013; Scott et al, 2019). Based on their academic ability, Chown et al (2018) position them as 'high achievers' who are determined and passionate about their subject (Ward and Webster 2018); however, this ought not to bely challenges they might also face. Whilst there is little research which examines the specific transition to employment for autistic graduates (Author_1, 2019), it is likely that they encounter general transition-related challenges similar to when starting university (cf. Author 2 et al, in press), as well as many of the same difficulties as the general population on the autism spectrum when seeking employment. Studies report challenges with the social demands of the workplace, particularly in interacting and communicating with co-workers based on nonverbal cues (Baldwin et al, 2014; Krieger et al, 2012). Graduates with autism may also experience difficulties with sensory processing, leading, for some, to increased levels of discomfort and sensory overload (Ashburner et al, 2013). Such social and sensory experiences can cause extreme physical and emotional distress as well as feelings of anxiety, despair, isolation and the increase in 'restrictive and repetitive behaviours' (Harmuth et al, 2018; Hedley et al, 2018; Kapp et al, 2019). Older age, better education, absence of co-occurring conditions, and access to networks of support are all recognised as factors which might increase potential for employment success among graduates with autism (Hedley et al, 2017; Holwerda et al, 2013).

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Postgraduate parental engagement

A key aspect of the ecosystem for graduates with autism is family and parental engagement. Young people across European and Western countries are increasingly dependent on their parents for longer, even beyond higher education (Roksa and Arum, 2012) and there is certainly evidence that parents play a significant and sustained role in the lives of young people on the autism spectrum, particularly in transition planning (Harmuth et al 2018; Hillier and Galizzi 2014; Giarelli et al, 2013; Nicholas et al 2018; Author_1, 2019). There are currently various transition planning models in use among this population, many of which involve parents. The best known is Kohler et al's (2016) Taxonomy for Transition Programming 2.0, which positions family engagement as central to successful transition. Similarly, the online transition planning program Better OutcOmes & Successful Transitions for Autism (BOOST-A™), has also been reported by parents to be effective (Hatfield et al, 2018). Carter et al (2012) report a five-fold increase in the chances of work participation after high-school where parents held high job expectations and were engaged in the process. As such many parents end up taking on 'key-worker' or advocacy roles to support the successful transition into adulthood and employment (Mitchell and Beresford, 2014; Van Bourgondien et al 2014). Such findings are also reported by Nicholas et al (2018) who identified parents' role in navigating services and liaising with employers and employment service personnel as crucial for job sustainability.

Institutional support

A further factor in the ecosystem for graduates with autism is their university or college. As with other students with disabilities, there is an increasing awareness that students with autism require additional support to further their career goals and promote long-term independence (Gelbar et al, 2015). Opportunities for employment preparation, such as mock interviews and career exploration activities are considered useful as are

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internships and developing a disclosure plan for employers (Briel and Getzel 2014; Hatfield et al, 2018; Mitchell and Beresford, 2014). VanBergeijk et al (2008) emphasize the need for university support service staff, in particular careers advisors, to provide information that is clear and precise and to offer opportunities to identify interests, abilities, talents, and skills and practice a range of job seeking skills. Time might also be spent developing soft skills, such as working as a team, knowing business etiquette, and navigating a work environment. A challenge in this regard is the 'invisibility' of the autism diagnosis which can lead to students finding it difficult to justify their requirements, and a lack of understanding and adequate support by the institution (Anderson et al, 2017; Hatfield et al, 2018).

Workplace

The workplace is a central component of the employment ecosystem for graduates on the autism spectrum. Throughout their university courses, they might engage in a range of work experiences, placements and internships (Dipeolu et al, 2015). In principle, this ought to increase their chances of success, however, given poor postgraduate outcomes (Gelbar et al, 2015; Allen and Coney, 2019) there appear to be significant barriers. One of the most complex (and under-researched) obstacles to employment for graduates with autism is industry professionals' lack of understanding or negative attitudes. Mai's (2019) study finds that hiring managers discriminate against candidates with an autism diagnosis based on the belief that co-workers would resent having to alter their working practices and that qualified candidates with autism would embarrass the company, moreover they tended to hold a range of incorrect stereotypes related to absenteeism and dependability. Other studies also suggest that some employers hold negative views based on perceived barriers such as the cost of reasonable adjustments, lower productivity, and additional supervision requirements (Scott et al, 2019).

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Given low levels of understanding among many industry professionals, recruitment processes, including job adverts, interviews, and assessment centres are typically designed with only neurotypical candidates in mind and can thus present barriers for graduates with autism (Hedley et al, 2018; Strickland et al, 2013). Generic job descriptions, which use figurative language ('you'll blow the customers' minds') or stipulate capacities not always essential to the job role, for example 'become one of the team' and 'communicate with impact and empathy' can make navigating this process difficult (Handley, 2018:245; Scott et al, 2015). Finally, the spatial and material conditions of workspaces can be challenging for employees with autism, particularly where these generate high sensory demands through, for example, strip lighting or loud open-plan offices (Giarelli et al, 2013; Landon et al, 2016).

Research Aims

Previous research has predominantly focused either on general trends in employment rates for adults with autism or, within the context of higher education, on students' induction into university or college and inclusive pedagogies (cf. Anderson et al 2017); however, there is a gap in research regarding the transition out of higher education and into the workplace for this group. This study, therefore, aimed to contribute to the evidence-base and generate new understanding focussed on the barriers and pathways to competitive employment for graduates with autism based on an ecosystem approach (Nicholas et al, 2018). The research was guided by the following questions:

1. *What are the barriers to competitive employment for graduates with autism?*
2. *What are the pathways to success in competitive employment for graduates with autism?*
3. *How do internal and external factors interact in opening up or closing down such opportunities?*

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This study draws reports a two-phase qualitative research design which allowed for comparative analysis between and across the data in the generation of new theory. Charmaz (2005) notes how this approach proves useful for illuminating how inequalities are manifested at interactional and organisational levels, which was at the heart of this study.

Methods

Phase 1 included twenty-one semi-structured interviews with students and recent graduates with autism reporting on their experiences of seeking employment. The participants ranged in age from 21 to 26 years (M_{age}=22.19). Fifteen participants identified themselves as male and 6 identified as female. In total ten of the participants were students within 12 months of completing university and 11 were recent graduates. The majority (n= 17) self-reported a diagnosis of Asperger's syndrome and four self-reported a diagnosis of autism; all but two had received their diagnosis in childhood.

In line with theoretical sampling, participant selection for Phase 2 was informed by initial analysis of Phase 1 data. In total four focus groups (FocGrp_1-4) took place among 58 community stakeholders, including a range of actors involved in the process of supporting graduates with autism into competitive employment. The three largest groups included careers and disability practitioners (21%), public sector employees (19%) and autistic graduates (17%). Two thirds (67%) of the participants were women and the majority of the participants reported their age to be between 41-50 years with 74% aged between 31-60 years of age.

Procedure

Participants for both groups were recruited purposively through local and national networks using snowballing techniques. Ethical approval was granted for both phases of

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the research by the first author's institutional review board. Written informed consent was obtained from each participant prior to data collection. All data were audio-recorded using a digital voice recorder and transcribed verbatim. Data were analysed with the following steps undertaken by the two authors:

1. close reading of transcripts from both datasets;
2. identification of open codes and comparative analysis between the different participants and two datasets to generate categories with inter-rater reliability achieved through a consensus approach;
3. Use of NVivo-11® to aid axial coding and higher-level abstraction of data into five initial themes: individual experience of autism; networks of support; barriers to success; pathways to success; and societal-cultural factors (see Table 1);
4. Integration of data into theoretical ecosystem framework, to enhance the explanatory power of the data (see Figure 1).

Table 1 here

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Findings

The following section outlines the five initial themes identified in the data: individual experience of autism; networks of support; barriers to success; pathways to success; and societal-cultural factors. Our analysis, however, takes these further through an analytic framework which better elucidates how they relate to one another in four distinct ways (see Figure 1). In the first instance, the five themes are understood to fit within three nested superordinate themes of people, practices and perspectives/policies, thus indicating the contingent nature of the employment ecosystem for graduates with autism. Secondly, within and as part of these nested themes are six graduated layers including the graduate with autism, parents, institutional support, supported employment providers, employers, and socio-cultural. These represent aspects of the employment ecosystem which are proximal or distal relative to how the individual experiences them and indicative of the impact that different people, practices and policies can have in generating pathways to success or barriers to employment. Thirdly, our data suggest a temporal dimension which accounts for past experiences. And finally, our themes and the categories within them are analysed according to the extent to which they mediate success in accessing competitive employment for graduates with autism.

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Figure 1 here

People: The individual experience of autism

At the most proximal of the six ecosystem layers is the autistic graduate and their individual experience of autism. Participants across both phases reported heterogeneous experiences of autism in the context of employment, reflected here by statements such as, 'people who are autistic, they're not all the same'. The most

prominent category was embodied differences, which related how an autism diagnosis can be viewed as a strength but also potentially problematic, depending on the individual's perspective of the condition and the intensity to which the neurocognitive differences present themselves. Participants reported differences related to 'sensory sensitivities', such as challenges processing multiple people speaking at once or 'shiny colours or stimulating surfaces'; and difficulties managing changes to routines and unexpected outcomes. However, the most frequently discussed was social communication differences. Both participants below experienced anxiety around formal and informal social interactions and reported expending emotional energy on planning all the possible outcomes.

> If I know something's coming up the day before I literally sit for hours to think through every possible scenario that might possibly go wrong and think 'what's appropriate to say, what might not be appropriate to say' ...when it comes to it the preparation is usually just a waste of time but there are times when I've been able to fall back on what I've thought. (Aut_adult_FocGrp2)

> So, banter is really difficult… everyone is ripping the heck out of each other - what if I say something and it's a little bit too much… what if I try and say something and it's just awkward and everyone laughs at me? (Aut_adult_FocGrp4)

Participants with autism specifically explained the need to mask these differences in a neurotypical workplace and the emotional strain that is experienced as a result. One individual referred to his attempts to 'pass as normal' as 'draining' where energy was expended focussing on 'your body language, your behaviour, trying not to say anything inappropriate' (Aut_adult_FocGrp1).

The autism experience was, however, also described as potentially advantageous in the workplace and there was some evidence of resistance to perceiving autism as a disability. One public sector employee identified the usefulness of the neurodiversity movement for articulating neurological difference as potentially 'an asset to companies'.

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There was also acknowledgement of the dangers of "over-selling" the strengths of autism, particularly where it leads to viewing it as a commodity and gives the impression that it is all skills without any need for adjustments.

> you don't want to turn autistic people into a product to sell… you know the conveyor belt 'oh here's the next set of people on the autism spectrum' (Aut_adult_FocGrp4)

> there needs to be a balance...it's terribly important to highlight those positives but equally it's the balance of needs (Parent_FocGrp2)

From this first theme, the individual autistic experience is clearly important in leading to better understanding into how this heterogenous identity plays a role in generating opportunities but can also be perceived as a barrier in gaining competitive employment. However, the extent to which it leads to these outcomes is frequently contingent on how other people across other layers, including parents, university staff and employers perceive autism.

People: Networks of support

Participants identified networks of support, including parents and university support staff which were important for securing competitive employment and operate in more or less proximal-distal ways. Parents were recognised as being particularly significant, especially in job searching, application preparation and pre- and post-interview support. Whilst the majority of examples were positive, a smaller number of participants reported how parental attitudes were, at times, also delegitimising.

> My family suspects that the need for token disabled employees may make [my diagnosis] enabling (Int_Grad5)

This insight is useful in acknowledging that, just as for the individual, the autism diagnosis can be considered more or less of a strength in employment by family members.

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Universities were also identified as sources of support whilst at this ecosystem layer involvement was less involved compared to parents. Participants reported the importance of good careers advice, internships, and specialist approaches or programmes for success. One Careers Advisor related how one Science, Technology, Engineering and Mathematics (STEM) area responded to the challenges of discriminatory interview processes,

> I worked with Engineering, so there's a lot of undergraduates on the autism spectrum and one of the initiatives was to bring the employers in to see the students working as a form of assessment so they don't have to go through interviews (Car_Adv_FocGrp4)

> At [my] uni, I've been part of a 10 week employability workshop type of thing… what I found most useful was the mock interviews; we met people from the Council and they interviewed us like it was a proper job. (Int_Grad7)

Finally, supported employment advisors, who typically work in close partnership to place and retain individuals with autism in competitive employment, were recognised as being effective for offering individualised support, which attended to both practical and psychological needs. This second theme provides insight into how people derived from family, university staff, and supported employment agencies form part of networks of supports which can create pathways to success. These were identified within the most proximal layers, indicating how important the personal element is for catering for individuals' needs.

Practices: Barriers to success

The third and fourth themes relate more specifically to practices and highlight how these can open up or close down opportunities for graduates with autism. On a temporal level, accounts related various previous experiences of rejection, discrimination and de-legitimisation of the autistic identity. Represented within more distal ecosystem layers, these were viewed as a consequence of a lack of knowledge

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about autism generally and inclusive employment practice specifically. The rejection was frequently experienced at the application stage of the process.

> By the time I got my current job I'd fired off over 100 applications and had about 10 or 15 interviews out of those (Int_Grad4).
>
> I'm trying to do about five or six applications per day but nothing so far, it's quite frustrating (Int_Grad7)

Whilst a competitive labour market is a challenge for any university graduate, for this group their autism diagnosis was recognised as an additional barrier. This was especially acute in relation to disclosure, where they felt they would be, or had been, discriminated against in the past and resulted in a reluctance to disclose at all.

> I never told any of the people…I'm not having your perception of autism hold me back (Int_Grad10)
>
> I work with a lot of young people applying for jobs and their first reaction is 'I don't really want to tell anyone' because they immediately think it will stop them getting a job (Car_Adv_FocGrp2)

Persistent rejection led, for many, to a loss of trust in employers and a fear of disclosure over time. These feelings were, however, also realised through some participants' experiences of managers' and colleagues' delegitimising attitudes.

> I told [my manager] that I had Asperger's and I find it really hard if you don't give me an ordered list but he didn't and he kept saying my memory was rubbish, making fun of Asperger's turning it into a joke in the workplace... about a month into it he brought my application form upstairs and went 'What's this? We know it's been proven Asperger's doesn't exist… it's all in your head you're making it up!' (Aut_adult_FocGrp2)

Misconceptions about autism, an individual's high levels of skill, or their capacity to mask their different cognitive style can all contribute to the experience of autism being delegitimised by an employer. This clearly creates challenges with respect to receiving the kind of positive recognition required to access support and be successful in the workplace. Fundamentally, however, negative and discriminatory instances such as these, served to generate a loss of trust in employers more generally.

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Participants rationalised their negative experiences as a result of a 'lack of knowledge about autism and inclusive practice'; here reflected as the largest category in the dataset (n=54).

> Employers' lack of exposure, not appreciating that you've disclosed it, that maybe they need to have a conversation with you about what that meant for you and what accommodations they might need to make (Aut_adult_FocGrp1)

Even among parents of young people with autism, there was an acknowledgement that employers' attitudes are often not pernicious, simply ill-informed:

> I worked with an autistic colleague and until we had our son's diagnosis I was ignorant (Parent_FocGrp3)

In relation to a lack of knowledge of inclusive practice, recruitment processes were identified as particularly exclusionary. Participants related how standard job adverts frequently state requirements that are not reflective of the role itself, which can limit applicants with autism who may rule themselves out despite being capable of success.

> The job adverts that say 'You have to be a team player with good communication skills' - all that sort of thing may be off-putting for people with autism (Supp_Empl_FocGrp2)

Interviews were also identified as barriers, especially where, as one adult with autism in the focus groups put it, there is an 'over-reliance on chemistry – oh, I like this person' but not on the skills they need to complete the role. Finally, psychometric testing was also perceived as exclusionary, as such mechanisms 'are designed for neurotypical people' and so fail to appreciate those who think differently.

Our data suggest that working practices and the demands they put on individuals with autism can also be exclusionary. Practical issues such as open plan offices, hot desking and multi-site working were all considered challenging. The social demands that 'go on under the radar' were, however, recognised as some of the least inclusive. Not only was there an expectation to partake in social activities but 'if someone comes in to do their job and goes home, that's often frowned upon' (Parent_FocGrp1). Such experiences, particularly within the context of earlier reports of anxiety regarding interactions, can

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lead to high levels of stress and feeling that 'you're going to eventually crack' (Aut_Adult_FocGrp4).

This third theme demonstrates the attitudinal and practical barriers that many students and graduates with autism face as they look for employment. Whilst these practices operate at the more distal end of the six ecosystem layers, they nonetheless have significant implications for the potential this group have accessing and being successful in competitive employment.

Practices: Pathways to success

The penultimate theme also relates to the superordinate theme of practices but offers a more positive interpretation of what might enable employment success for graduates with autism. Among the categories identified was enhanced knowledge and understanding, which reflects the core issue recognised in the previous theme. Examples of inclusive employers were presented as what might be possible,

> One employer who did come was GCHQ [British Intelligence Agency] they're very proactive about recruiting people on the spectrum because they see the advantages...I thought that was a very, very positive thing. (Car_Adv_FocGrp4)

> You've got to have employers who basically want to put on their website, want to shout out, these are the kind of adjustments that we make for disabled employees, not just adjustments for the physically disabled but also for the neurodiverse...we've got to get them to want to brag about it. (Pub_Sec_FocGrp1)

From these extracts, it is recognised that cultural shifts are most likely to come from industry itself, where particular sectors understand and recruit for the potential 'autistic advantage'. Where this is successful it is likely to lead to fuller exposure, greater opportunities and better outcomes for all involved. It was acknowledged that awareness-raising is not, on its own, enough. As one autistic graduate put it, "it might only take 20 minutes to become aware of it, but you need longer to become accepting

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and supportive of it. Development of understanding must, therefore, come through 'multiple approaches' and should involve 'people on the autism spectrum themselves'.

Another factor for success that participants reported was disclosure. This is interesting as it is perceived as both a risk factor and a potential benefit. Participants linked the need for disclosure to masking,

> If you don't disclose then you're setting yourself up for covering the rest of the time... it's stressful, it's fraught with possibilities that could go wrong (Aut_adult_FocGrp1)

For some, disclosure puts the control back in the hands of the autistic person,

> I'd quite like to be able to explain my difficulties in some way but also the positive things... and to be able to express those, so that it's not just seen as a negative thing (Aut_adult_FocGrp3)

Disclosure was also a pathway to additional support and reasonable adjustments and so as one participant put it, 'it's useful for them to know and it's useful for me for them to know'. This view was also articulated by a supported employment professional, who stated "if everybody knows then I can come in and we can job carve and help and support that person to be the best employee they can be". Disclosure also creates access to other reasonable adjustments including arranging Access to Work, a UK Government grant scheme which supports people with disabilities in work with specialist equipment and transport costs ; providing interview support where 'they can apply for funding for a support worker to attend'; getting and interpreting feedback; negotiating reasonable adjustments like different lighting and desk arrangements; and accessing a mentor to help navigate the social aspects of the workplace.

A final pathway to success was advocacy and being an ally, which is also part of the networks of support in many ways and indicative of how people and practices intersect. Whilst it did not require formal disclosure it does rely on trusting relationships, insofar as it must be somebody who you feel like you can connect with and you could tell 'I'm stressed right now' (Aut_adult_FocGrp4). Participants related different positive

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examples of this in the workplace, some more formal arrangements between line managers, allies, and autistic colleagues and others more informal as in this case,

> One of my other co-workers, she was really understanding, and one time when a customer told [a] joke, she actually explained the joke to me by whispering it in my ear and I was like 'thanks for that' and she was just like 'it's okay, my cousin's autistic' (Int_Grad8)

However, as well as allies, there was an emphasis on 'autistic employees [being] able to speak for themselves rather than needing someone to speak for them all the time'. As autistic employees develop strategies that make them successful and grow in confidence this is likely to be the most appropriate arrangement.

Themes 3 and 4 indicate the contingent nature of people and practices, where those at relatively proximal or distal layers can open up or close down employment opportunities for graduates with autism through their practices.

Perspectives and policies: Socio-cultural factors

The final theme falls into the widest and most distal of the three nested superordinate themes, 'perspectives and policies'. This, again, relates to a lack of understanding but 'not just by employers but by peers, by employees, by society'. Participants linked this to gaps in legislation, its understanding, or implementation. For example, the UK Autism Act (2009) 'needs to be more public' and was considered to require 'another twenty to twenty-five years to have any effect', particularly within the current socio-economic context of underfunded health and welfare systems.

Participants also noted the implications of industry-level differences for developments in inclusive practice. Those multinational companies were considered more able to take risks and had the Human Resources expertise and capabilities than smaller businesses 'where people haven't necessary encountered somebody with autism or Aspergers'. Whilst small or medium enterprises can be 'the best ones' they have fewer resources and, consequently, are more risk-averse.

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Discussion

The findings from these data offer important insights into the employment ecosystem for graduates with autism and the barriers and pathways to success. As Nicholas et al's (2018) study suggests, analyses which are more sensitive to the social, relational, and political factors, and which stretch beyond the individual jobseeker with autism, ought to be welcomed. Our framework (Figure 1) builds on previous bioecological systems specific to autism (Dent and Coles, 2012; Kuhn et al, 2018; Wright et al, 2019) but extends these to offer new insights specific to the employment experiences of graduates with autism.

Our findings indicate the involvement of multiple actors in accessing competitive employment, including the autistic graduate, parents, university, supported employment, employers, and legislators. Where our model diverges from others is by identifying these as six graduated ecosystem layers. At the most proximal is the graduate with autism, whose self-concept, experience and perspective of autism is fundamental in the employment ecosystem (Russell et al, 2019). Bronfenbrenner and Morris's (2006:810) bioecological model describes such 'active orientations' as 'force' and the most likely to influence a person's outcomes. This is certainly the case in these data where participants' embodied differences and varied perception of autism as dis/ability were central to their sense of success. At the most distal is the socio-cultural layer which has a less direct and obvious impact, as noted by participants with reference to legislation such as the UK Autism Act (2009). These categories might be considered mediators of access to work, engagement in job roles, work retainment, and advancement within employment contexts.

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Cutting across these six layers we theorise three nested and interlinking domains of influence: people, practices, and perspectives/policies, reflecting as Kreiger (2008:227) puts it, the 'intermingling of ecosystems… at *every* level, macro to micro, from societal to inside the body'. Based on our findings, the model reflects the importance of the heterogeneous experience of autism in relation to other connected actors, and in particular family members (Harmuth et al 2018), who fulfilled various advocacy and practical support roles (Mitchell and Beresford, 2014; Van Bourgondien et al 2014). We posit that a relational dimension encompasses that of practices and relates more specifically to what happens at home, at university, in the community through supported employment, or in the workplace. Indeed, Ling (2010) stresses that successful employment transition support requires collaborative relationships at every level and across actors. Similar to Ward and Webster (2018), those practices recognised as being most enabling for graduates with autism included specialist support, workplace adjustments, and advocacy / being an ally. At the other end of the mediating spectrum, participants reported discriminatory or exclusionary practices such as inaccessible recruitment procedures and unreasonable social demands, which concurs with wider literature (Hedley et al, 2018; Scott et al, 2018).

The broadest domain, and which encapsulates the other two within it, is perspectives/policies, which speaks to the cultural norms at national and global levels that shape attitudes towards autism and employment opportunities. All of the relationships, practices and outcomes are necessarily situated within these wider discourses. Whilst they exist at the most distal level, they have powerful implications; for example, the lack of societal understanding of autism precipitates discriminatory practices, delegitimising attitudes and, as a result, the reticence to disclose (Mai, 2019; Ohl et al, 2017). However, enhanced understanding at societal, practical and relational levels is also key to the solution; where there is understanding this presents possibilities

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for disclosure and associated pathways to reasonable adjustments and supported employment provision. The study by Scott et al (2017) in fact shows that employing an individual with autism provides benefits to employers and their organisations without incurring additional costs.

The final dimension in our framework is temporality. This is typically unacknowledged in other autism ecosystem analyses (Dent and Coles, 2012; Kuhn et al, 2018; Nicholas et al, 2018; Wright et al, 2019). In these data the repeated encounters of rejection from job roles and experiences of delegitimizing attitudes have an enduring and negative effect, precipitating a loss of trust of employers and fear of disclosure. Other temporal examples included participants' previous experiences of social masking and the emotional toll this can take, as well as the ongoing involvement of parents as advocates in the job process (Mitchell and Beresford, 2014). Such temporal analyses are close to what Bronfenbrenner and Morris (2006) refer to in their later versions of the bioecological model as 'proximal processes', constituted through progressively more complex, reciprocal and regular interactions between individuals and their environments over extended periods of time.

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Conclusion

This qualitative study makes an original contribution to the field by uncovering the complex and multi-dimensional ecosystem for graduates with autism making the transition to competitive employment. It theorises how employers' lack of awareness about autism and inclusive practice, discriminatory or delegitimising attitudes, and the eroding effect of previous rejections over time, resulted in a loss of trust and barriers to success. Conversely, understanding about autism, particularly when facilitated by autistic people or by dedicated employment advisors, alongside adjustments to

recruitment processes and the workplace environment, emerged as effective pathways in the employment ecosystem. Interestingly, our findings show that disclosure has the potential to be both a barrier and pathway to success in its capacity to either precipitate early rejection or, depending on context, provide a platform to communicate the 'autism advantage' to employers. As the international population of graduates with autism seek to access the competitive labour market there must be greater appreciation, at both proximal and distal levels, of the heterogeneous experience of autism and how with, often simple adjustments and better understanding, their various skills and capabilities can be converted into long-term success in the workplace.

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	Gaps in local government provision (6)
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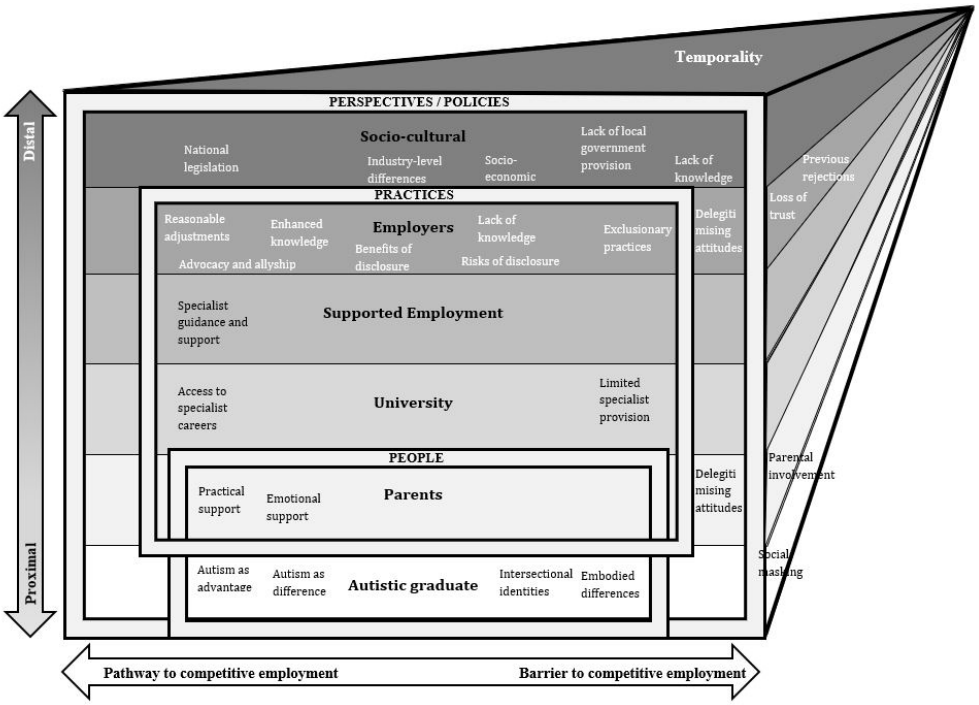

Employment Ecosystem

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